Predicting 30-Day and 1-Year Mortality of Nebraska Myocardial Infarction Patients from 2005 to 2009

Joint Public Health Data Center

Myocardial infarction (MI), also known as a heart attack, is the irreversible necrosis of heart muscle secondary to prolonged ischemia. Approximately 1.5 million cases of myocardial infarction occur annually in the United States. The purpose of this study is to identify important factors closely affecting the mortality of MI patients and to develop Logistic mortality models to predict 30-day and 1-year mortality probability after the first confirmed MI. Nebraska hospital discharge data (HDD) which includes emergency room (ER) and inpatient records, death certificate data, and emergency medical service (EMS) data from 2005 to 2009 were used in this project. The datasets were linked using SAS and LinkPlus. Mortality rates due to MI were significantly different for gender, age, and EMS use. The mortality probability of MI patients was predictable based on patient age and illness severity factors which included length of hospital stay, admission frequency in the past 6 months, EMS use, and some comorbidity variables. Male MI incidents accounted for 61% of all MI cases, and female was 39%. 1-year mortality rate of MI patients was 18.5% with 15.1% for male and 23.9% for female. 30-day mortality rate of MI patients was 10.6% with 8.8% for male and 13.3% for female.